# PRODUCT ATTRIBUTES AND CUSTOMER SATISFACTION OF GSM PHONE USER AMONG STUDENTS IN EKITI STATE TERTIARY INSTITUTIONS

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## ABSTRACT

The study was conducted to investigate the influence of product attributes on overall customer satisfaction among mobile phone users in Ekiti state tertiary institutions. The study population was limited to three selected tertiary institutions in Ekiti state with a sample size of 450 undergraduate students of the three selected tertiary institutions. Seven factors of mobile phone attributes were identified: brand and country, common functions, connectivity, body design, Personal Information Management (PIM) functions, product durability and multi- media functions. Cronbach alpha with co-efficient of 0.6 was used to measure the internal consistency of each factors. The data collected were analyzed using descriptive and inferential statistics. The results of the analyses reveal a significant positive correlation ($p < 0.05$) between product attributes and customer satisfaction among mobile phone users. The value of R = 0.492, $R^2$ = 0.242, Adjusted R square = 0.207 and F = 4.854 confirm this result. This study concludes that mobile phone users can differentiate between the mobile phones' features hence they decide on the one that best satisfy their needs using the attributes as key determinants when making purchase decision. It is recommended that marketing organizations should use this basis as platform to position their products.

**Keywords:** GSM, product attributes, phone users, customer satisfaction.

## INTRODUCTION

Competition among the mobile phone providers nowadays is fierce to the extent that only firm that is customer-focused will survive. The reasons among others are that consumers and customers' tastes and preferences are changing; there is growing need for cheap, accessible and efficient communication mode (Butt and De Run, 2009). As such pressure is mounting on them to provide and deliver cheap, innovative and high quality products. The result of such competitive push is likely to make mobile phone providers search for new and innovative ways to meet and satisfy customers. Meeting and satisfying the target customers, Liu (2007) asserts is the aim of marketing which starts from finding a need and fill it. No wonder, the essence of being in business is to create customer (Drucker, 1954). Since customers according to Hamel (1996) are becoming harder to please, are smarter, more demanding, less forgiving, more aware of competitive offers, Kotler, Jain and Maesincees (2002) argue that market power has shifted

from being a seller market to consumer market because they can define what they want in the way of customised goods and services. Thus, selling firms are compelled to compete and strengthen their capability to satisfy the customers (Ambroz & Praprotnik, 2008). A customer is satisfied if product purchased possesses the attributes that give pleasurable level of judgment and ongoing performance meets customer expectations (Oladele & Akeke, 2012; Kim, Park, & Jeong, 2004).

Therefore, there is need for marketers to get familiar with customers' needs and wants as well as which product quality in the form of attributes will attract them to continue to purchase in order to create satisfaction. The ability of Mobile phone producing firms to create high degree of satisfaction with product features that offers individuals the ability to work, communicate, entertain themselves in a location-free manner will capture and diffuses rapidly into consumers' lives particularly as Kimilog, Nasir, & Nasir (2010) assert that mobility has become prevalent force shaping consumer' life-styles. Thus, the objective of this study is to examine the effectiveness of mobile phone attributes on customer satisfaction among students in tertiary institutions.

University students represent an important market niche of shoppers among the Nigerian consumer markets. Based on the size and characteristics of the market, the students have become one of the most crucial markets for business especially mobile phones whose market has increased based on the expanding rate of service provided by mobile telecommunication operators (Adebisi, 2010). Since mobile phones have among other devices had one of the fastest household adoption rate (Comer & Wikle, 2008), and even among students through which feedback can easily be obtained, understanding the relative importance of product attributes that will influence their patronage is important to the success of new product development (Mokhlis & Yaakop, 2012) and marketing survival strategies. Therefore this study becomes necessary.

## LITERATURE REVIEW
### Product attributes
When producing organisation is making attempt at creating value to enhancing customer satisfaction, product quality should be an essential component to consider. Increasing customer satisfaction, by increasing customer value is a key issue for every firm. Customer value is the customer's perception of the attributes they want in the product or service and it is product that creates value for customers through not by delivering the products themselves, but by delivering consequences in their use situations. In this end, consumers do not buy products as an end in themselves but for the benefits which they provide (Malasi, 2012). Products therefore comprise of complex bundles of attributes which must be translated into benefits for customers. As a result, features which products possess are the biggest competitive tool for differentiating from competitor's products because to the consumer, the maxim is, if it is not Samsung cell phone for instance, it cannot be Samsung. Therefore, being the first producer to introduce a needed and valued new feature is one of the most effective ways to compete. Producers need to be knowledgeable of the product attributes perceived as the most important by each individual consumer group in order to build and maintain market share because it is the consumer who determines which attributes matter to him. Thus, by understanding which attribute will satisfy customers, Oyatoye (2011) demonstrates that firms need to work out optimum level of attributes that should balance customer value expectations as benchmark.

Product attributes has been seen by Wu et al (1988) among other researchers as the physical properties of a product that were quantitatively and objectively measurable. However, in the

recent time, Jamal and Goode (2001) argue that it includes all evaluative criteria such as price, physical properties, brand name, quality, style, benefit. Despite this extensive discussion on product features and satisfaction customer benefits, the results is not yet grounded in the Nigeria business environment as consumers particularly students who fall so much in love with cell phone continue to change from having one cell phone to the other looking for the ones that possess a desirable features. Hence, this study aims at addressing which product feature(s) in the mobile phone market is capable of enhancing customer satisfaction in Nigeria context.

## Customer Satisfaction

Customer satisfaction as a frequently used marketing concept comes about when customer expectations are met or exceeded in a specific transaction. Customer satisfaction is the judgment that the product or service feature in the hands of consumer provides a pleasurable level of judgments (Oladele & Akeke, 2012) and consumption-related fulfillment. According to Rajpurohit and Vasita (2011), customer satisfaction is the level of a person's felt state resulting from comparing a product's perceived performance (outcome) in relation to the person's expectations. This means that satisfaction is the gap between what customer is currently enjoying as against its expectations.

It is considered to be the key to success and long-term competitiveness. The knowledge of customer satisfaction is the source for the fulfillment of customer expectations (Ambroz and Praprotnik, 2008). Customer satisfaction is a measure of how a product or service purchased meet or surpasses expectation or cause consumption-related fulfillment of customers. This is because the customer may have measured the satisfaction outcome level of the quality expectations, and when this is fulfilled, the customer is satisfied. The assessment of quality level expectation in product or service encountered is in line with expectancy-disconfirmation theory of Oliver (1980). This theory has since been found useful as a framework for the assessment of customer satisfaction. For instance, Bhattacherjee and Premkumar (2004) argue that every purchaser engages in purchase decision with desirable behaviour about the product or service performance and when this fails to meet the customer experience, then disconfirmation takes place and customer is dissatisfied. Therefore, achieving customer satisfaction requires the recognition and anticipation of customers' needs in order to satisfy them and avoid post purchase dissonance. In this regard, any business concern which is able to device means of understanding and satisfying customers' needs makes greater profits than those which fail to understand and satisfy them (Barsky & Nash, 2003).

## Product Attributes and Customer Satisfaction

Several empirical studies have highlighted the effects of product attributes on customer satisfaction. Malasi (2012) carried out a study on influence of product attributes on mobile phone preference among University students considering various aspects of product and brand attributes,. The results indicate that varying the product attributes has an influence on the undergraduate students' preferences on mobile phone, even though most of the respondents would not consider these attributes to be important when making purchase decision. Similarly, in the study carried out by Oghojafor, Ladipo & Rahim (2012) on the influence of product attributes on consumer purchase decision in the food and beverage industry showed that a positive correlation between product attribute and consumer purchase decision exists as consumers are able to evaluate alternative products on the strength of various attributes. Bahn, Lee, Lee, and Yun (2007) studied how feel of material, elasticity, tactile oneness, shape, and colour of the passenger car crash pad influences satisfaction. The results indicated that softness of the material was the key affective response factor of satisfaction.

Seva, Duh, and Helander (2007) found strong relationship between attributes of mobile phones and pre-purchase effect. For example, slimmer phones increases feeling of contentment and encouragement, larger display increases feeling of amazement and encouragement.

According to the Mason and Bequette (1998), perceptions on product performance based on salient attributes are more important in influencing the consumer purchase behavior than actual product attribute performances. For low-involvement products, consumers have more objective view of the nature of the attributes for example food and cosmetics, because they are constantly being advertised and promoted. We can say that consumer evaluation of a product can be broken into evaluation related to product (tangible or physical attributes) and brand name (intangible attributes, or images added to the product due to its brand names).

**Research Method**
The study is descriptive type- survey. A sample of 550 students from 45000 in 3 tertiary institutions for the purpose of this study was selected. The three institutions have been chosen as they represent a large number of institutions in Ekiti State. Respondents represented the three institutions were namely: Ekiti State university, Federal Polytechnic, and College of Education. Data were collected through questionnaire by self and was divided into three sections on a 5 point likert scale anchored by SA, A U, D, SD. Out of the questionnaire distributed, only 480 were returned and 30 were found unusable. Conbach's alpha was used to estimate the reliability of the questionnaire. Product attributes was measured on 7 factors of brand and country, common functions, connectivity, body design, product durability, multimedia functions and personal information management (PIM), while customer satisfaction was measured using customer loyalty, customer retention, customer cross-selling (recommendation) and level of patronage. Data were analysed through descriptive and inferential statistics with the aid of SPSS software. Specifically, the inferential statistics used was Stepwise regression analysis.

**RESULTS AND DISCUSSION**
**Descriptive statistics**
The findings presented in table 1 revealed that among the seven attributes of mobile phones in this study, product durability, common function, connectivity and multimedia functions were having the highest mean scores. The results indicate that the attributes which products and services possess significantly influence decision to purchase and lead to satisfaction derived from buying such products.

**Table 1: Descriptive Statistics and Cronbach's alpha values**

| No | Item | Mean | Std. Dev |
|----|------|------|----------|
| **A** | **Brand and Country** (Cronbach's alpha value =0.622) | | |
| | I will continue to choose/purchase certain brands of mobile phone | 3.93 | 0.878 |
| | I will only choose mobile phones from certain countries. | 3.08 | 0.963 |
| | I will only use certain brands of mobile phone as a result of my loyalty to the brand. | 3.12 | 1.005 |
| **B** | **Common Function** (Cronbach's alpha value =0.739) | | |
| | Easy to use input method will increase my level of patronage of a mobile phone. | 4.08 | 0.697 |
| | I intend to re-purchase a mobile phone with good SMS functions (Storage and manipulation) | 4.14 | 0.785 |
| | I intend to re-purchase a mobile phone with good phonebook functions (Storage and manipulation | 4.11 | 0.739 |
| **C** | **Connectivity** (Cronbach's alpha value = 0.577) | | |
| | I intend to re-purchase a mobile phone with a GPRS connection. | 3.87 | 0.966 |
| | I will continue to purchase a mobile phone that has (USB/Bluetooth/wifi/Hotspot) connectivity | 4.34 | 0.721 |
| **D** | **Body Design** (Cronbach's alpha value = 0.671) | | |
| | I will make repeat purchases of a mobile phone with an attractive body design | 4.01 | 0.823 |
| | I would recommend a mobile phone with an attractive body design to others | 3.92 | 0.915 |
| | I will make repeat purchases of a mobile phone with special material | 3.91 | 0.854 |
| **E** | **Personal information management function** (Cronbach's alpha value = 0.697) | | |
| | Calendar, event reminder is important when buying a mobile phone | 3.90 | 0.980 |
| | I think the date planning functions like notepad, to do list, memo will make me purchase a mobile phone | 3.66 | 1.028 |
| **F** | **Product Durability** (Cronbach's alpha value = 0.727) | | |
| | I would be happy to recommend a mobile phone with lasting battery time to others | 4.42 | 0.622 |
| | I will continue to choose/purchase a mobile phone with a long battery life | 4.49 | 0.630 |
| | I would gladly recommend the purchase of a mobile phone with screen resistance to scratch | 4.32 | 0.814 |
| | If my phone is waterproof, it would be a great pleasure for me to tell people about it | 4.47 | 0.755 |
| | I will continue to purchase a mobile phone that is waterproof | 4.35 | 0.903 |
| | Little or no impact on my phone as a result of a fall will prompt me to tell people about it | 4.19 | 0.798 |
| **G** | **Multi-media function** (Cronbach's alpha value =0.560) | | |
| | The games and ringtones of a mobile phone will make me want to purchase it. | 3.83 | 0.921 |
| | I will continue to purchase a mobile phone with a camera function | 4.26 | 0.658 |
| | I will not purchase a phone without a video and music player | 3.99 | 1.038 |
| | I would be loyal to a brand with good video quality and music sound | 4.07 | 0.793 |

**Product attributes and Customer satisfaction Measure**

The results in table 2 show that the most important attributes capable of satisfying customer satisfaction of mobile phones are Bluetooth (Mean =4.30), phonebook function (Mean = 4.18), SMS function (Mean = 4.26), input method (Mean = 4.18), video picture (Mean = 4.16) and music qualities (Mean = 4.15), camera (Mean = 4.14), appearance (Mean = 4.07) etc in that order.

**Table 2: Measure of Customer Satisfaction of product attributes**

| No | Attributes | Mean | Rank | Std Dev | Variance |
|----|-----------|------|------|---------|----------|
| 1 | Input Method | 4.18 | 3 | 0.663 | 0.439 |
| 2 | SMS Function | 4.26 | 2 | 0.605 | 0.367 |
| 3 | Phonebook Function | 4.18 | 3 | 0.669 | 0.448 |
| 4 | Appearance | 4.07 | 7 | 0.788 | 0.621 |
| 5 | Body Colour | 4.04 | 8 | 0.788 | 0.622 |
| 6 | GPRS | 3.72 | 16 | 0.929 | 0.863 |
| 7 | Wifi Connectivity | 3.89 | 11 | 0.889 | 0.791 |
| 8 | Bluetooth | 4.30 | 1 | 0.681 | 0.464 |
| 9 | Hotspot Connectivity | 3.92 | 10 | 0.877 | 0.769 |
| 10 | Phone Accessories | 3.98 | 9 | 0.745 | 0.554 |
| 11 | Body Design | 3.98 | 9 | 0.821 | 0.675 |
| 12 | Calendar display and event reminder | 3.98 | 9 | 0.820 | 0.672 |
| 13 | Battery time | 3.68 | 17 | 1.152 | 1.328 |
| 14 | Battery useful life | 3.74 | 15 | 1.084 | 1.175 |
| 15 | Games | 3.84 | 14 | 0.812 | 0.659 |
| 16 | Voice recording | 3.87 | 13 | 0.734 | 0.538 |
| 17 | Ring tones | 3.88 | 12 | 0.736 | 0.542 |
| 18 | Camera picture quality | 4.14 | 6 | 0.705 | 0.496 |
| 19 | Video and music sound | 4.15 | 5 | 0.767 | 0.783 |
| 20 | Video picture quality | 4.16 | 4 | 0.783 | 0.613 |
| 21 | Overall satisfaction with mobile phone | 4.15 | 5 | 0.693 | 0.480 |

A stepwise multiple regression was conducted to evaluate whether product attributes predict customer satisfaction of mobile phones and the results as presented on tables 3, 4, and 5 indicate statistical significance $F_{(7,441)} = 23.69$, $p < 0.05$). The multiple correlations were .52, indicating approximately 27.3% of the variance of customer satisfaction could be accounted for by the independent variables. Six independent variables such as games, hot stop connectivity, battery useful life, battery time, appearance, video and music sound had statistical significance and positive relationship with customer satisfaction. Games and video and music sound were the most significant independent variables with larger Beta coefficients. This results corroborate the findings of Malasi (2012), Mason and Bequette (1998), Oghojafor, Ladipo & Rahim (2012), Oghojafor, Ladipo & Rahim (2012) that product performance not only influence customer purchase decision but also a positive correlation between product attributes and consumer purchase decision exists as consumers are able to evaluate alternative products on the strength of various attributes.

**Table 3: ANOVA**

| Model | Sum of squares | df | Mean Square | F | Sig |
|-------|---------------|------|-------------|--------|-------|
| Regression | 68.257 | 7 | 9.751 | 23.691 | 0.000 |
| Residual | 181.515 | 441 | 0.412 | | |
| Total | 249.773 | 448 | | | |

**Table 4: Model summary**

| R | R Square | Adjusted R Square | Std. error of estimate |
|-------|----------|-------------------|------------------------|
| 0.523 | 0.273 | 0.262 | 0.642 |

**Table 5: REGRESSION TABLE**

|  | B | Std.error | t | sig |
|---|---|---|---|---|
| Constant | 1.410 | 0.233 | 6.039 | 0.000 |
| C14 | 0.102 | 0.042 | 2.410 | 0.016 |
| C11 | 0.081 | 0.046 | 1.750 | 0.081 |
| C15 | 0.122 | 0.039 | 3.147 | 0.002 |
| C9 | 0.097 | 0.036 | 2.658 | 0.008 |
| C19 | 0.105 | 0.050 | 2.092 | 0.037 |
| C13 | 0.092 | 0.039 | 2.344 | 0.020 |
| C4 | 0.100 | 0.044 | 2.287 | 0.023 |

## CONCLUSION AND RECOMMENDATIONS

The objective of the study was to examine the effects of product attributes on customer satisfaction of mobile phones using stepwise regression analysis to predict attributes that are important to customers under study. The results provide some significant outcomes. First out of the seven attributes, common functions, product durability, multimedia function were having the highest means and standard deviations. It showed further that Bluetooth, phonebook, SMS function, input method, video picture, music quality camera, and appearance of the phones were capable of satisfying customers of mobile phone. Furthermore, games, hot stop connectivity, battery useful life, battery time, appearance, video and music sound were attribute that can predict customer satisfaction in the study area.

It is recommended that mobile phone providers should be innovative enough to improve on these attributes because the most attribute which customer value when buying goods should be the base which marketing organisation should put in mind when design and introducing a product to the market.

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